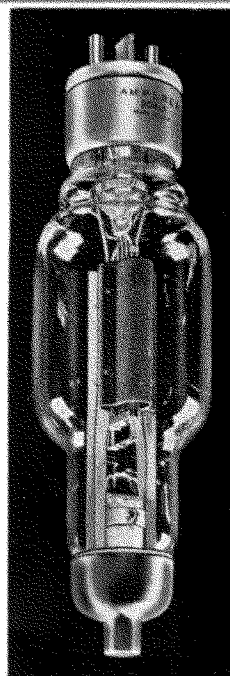
AMPEREX TRANSMITTING TUBE 204-A

R.F. Power Amplifier, Oscillator, Class B Modulator



MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

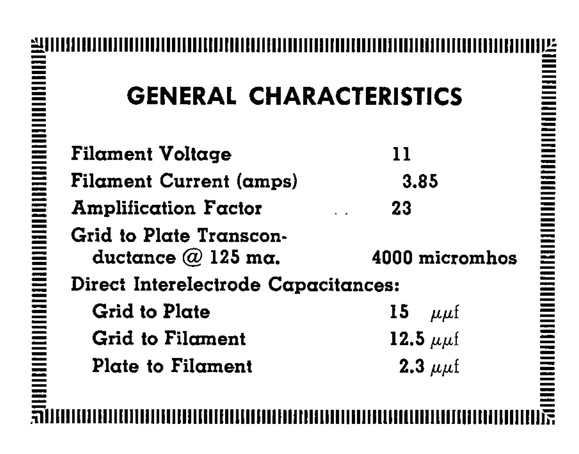
A.F. Power Amplifier and Modulator—Class B

	Maximum Rating per Tube	Typical Operation Two Tubes		
A.C. Filament Voltage	—	11	11	11
D.C. Plate Voltage	3000	2000	2500	3000
D.C. Grid Voltage	—	—60	—80	—100
Load Resistance (ohms per tube)	—	2200	3400	5000
Effective Load Resistance (Plate to Plate) (ohms)	—	8800	13600	20000
Zero Signal Plate Current (ma.)	—	80	80	80
Peak A.F. Grid to Grid Voltage	—	500	500	500
Max. Signal Plate Current (ma.)	275	500	430	370
Max. Signal Plate Input (watts)	600	1000	1075	1110
Plate Dissipation (watts)	250	—	—	—
Max. Signal Driving Power (Approx.) (watts)	—	15	14	11
Max. Signal Plate Power Output (watts)	—	650	740	750

R.F. Power Amplifier—Class B—Telephony

(Carrier conditions for use with a maximum modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	—	11	11
D.C. Plate Voltage	2500	2000	2500
D.C. Grid Voltage	—	—60	—80
Peak R.F. Grid Voltage	—	150	150
D.C. Plate Current (ma.)	225	165	150
Plate Input (watts)	400	330	375
D.C. Grid Current (Approx.) (ma.)	—	5	3
R.F. Grid Current (amps)	8	—	—
Plate Dissipation (watts)	250	223	250
Driving Power (at Peak Modulation) (watts)	—	10	7
Plate Power Output (watts)	—	107	125
Frequency Limit for Above Operation (mc.)	3	—	—
F.C.C. Rating for Use in Final Stage of Broadcast Transmitters (watts)	75	—	—



GENERAL CHARACTERISTICS

Filament Voltage	11
Filament Current (amps)	3.85
Amplification Factor	23
Grid to Plate Transconductance @ 125 ma.	4000 micromhos
Direct Interelectrode Capacitances:	
Grid to Plate	15 $\mu\mu f$
Grid to Filament	12.5 $\mu\mu f$
Plate to Filament	2.3 $\mu\mu f$

Plate Modulated R.F. Power Amplifier Class C—Telephony

(Carrier conditions for use with a maximum modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube		
A.C. Filament Voltage	—	11	11	11
D.C. Plate Voltage	2000	1500	2000	2000
D.C. Grid Voltage	—500	—200	—250	—250
Peak R.F. Grid Voltage	—	440	460	490
D.C. Plate Current (ma.)	275	250	208	250
Plate Input (watts)	550	375	416	500
D.C. Grid Current (Approx.) (ma.)	80	30	16	24
R.F. Grid Current (amps.)	8	—	—	—
Plate Dissipation (watts)	167	115	111	135
Driving Power (Approx.) (watts)	—	12	7	11
Plate Power Output (watts)	—	260	305	365
Frequency Limit for Above Operation (mc.)	3	..	.	...
F.C.C. Rating for Use in Final Stage of Broadcast Transmitters (watts)	250	—	250	—

R.F. Power Amplifier and Oscillator—Class C Telegraphy

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	—	11	11
D.C. Plate Voltage	2500	2000	2500
D.C. Grid Voltage	—500	—175	—200
Peak R.F. Grid Voltage	—	425	440
D.C. Plate Current (ma.)	275	275	275
Plate Input (watts)	690	550	687
D.C. Grid Current (Approx.) (ma.)	80	30	20
R.F. Grid Current (amps.)	10	—	—
Plate Dissipation (watts)	250	160	187
Driving Power (Approx.) (watts)	—	12	8
Plate Power Output (watts)	—	390	500
Frequency Limit for Above Operation (mc.)	3	—	—



GRID MILLIAMPERES
300
200
100
+260
+300 GRID VOLTS
+220
+180
+140
+100
+60
+20
0 200 400 600 800 1000
PLATE VOLTS

FILAMENT
11"/16
11"/16
1"/8
5"/16
3 1"/32
GRID
2 5"/8
4 1"/16 MAX.
14 1"/4 ± 1"/8
.800"
.813"
PLATE
2 1"/4

PLATE AMPERES
1.5
1.0
.5
$E_p = E_g$
+300
+260
+220
+180
+140
+100
+60
+20
0 GRID VOLTS
-20
-60
-100
0 500 1000 1500 2000 2500 3000 3500
PLATE VOLTS